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(51) INT CL<sup>7</sup>

A41D 27/00 27/08, G09F 21/02

(52) UK CL (Edition S)

A3V V5D V5X

(56) Documents Cited

US 5680718 A US 5113325 A US 4882865 A  
US 4709307 A US 4602191 A

(58) Field of Search

UK CL (Edition S) A3V  
INT CL<sup>7</sup> A41D, G09F  
Online: EPODOC, WPI & JAPIO

(54) Abstract Title

Clothing

(57) The article of clothing 2 comprises a number of LEDs attached thereto. The LEDs are arranged to convey a message 4 or display an image. Each LED 8 is attached to a battery or batteries 10. The LEDs are secured to the article of clothing using a hook and pile fastener. The LEDs may be displayed permanently or may be arranged to flash on and off intermittently under the control of a timer. In addition, the wearer of the garment 2 may be able to select or choose the message to be displayed on the garment.

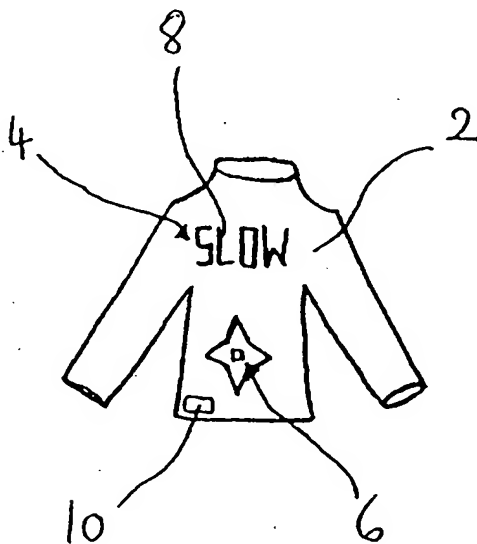


FIGURE 1

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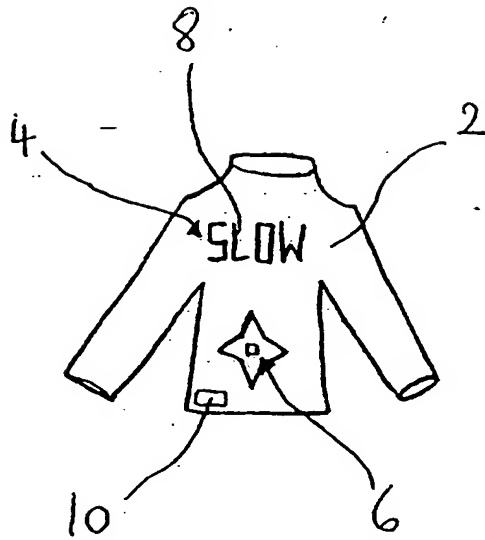


FIGURE 1

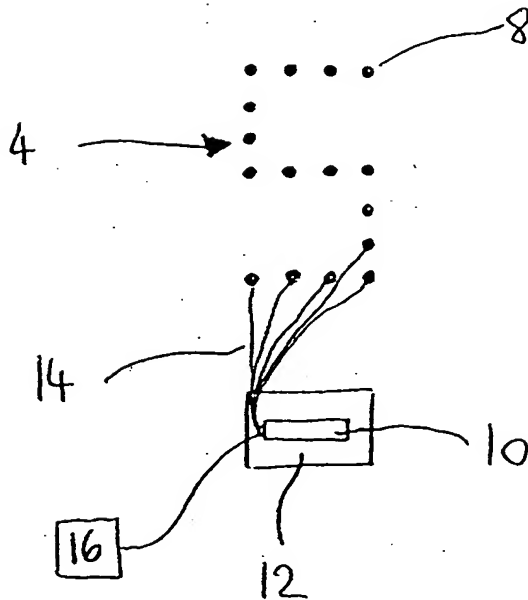


FIGURE 2

### Clothing

The present invention relates to clothing.

- 5 The inventor of the present invention has realised the potential advantages of providing articles of clothing on which messages may be written, these messages being conveyed from the wearer of the clothing to a third party who is spaced from the wearer.
- 10 For example, a cyclist may wish to make himself more obvious to surrounding traffic in conditions of poor visibility or when about to carry out a manoeuvre; or stewards, e.g. at a football match, may wish to make themselves stand out more in busy crowds.
- 15 According to a first aspect of the present invention, there is provided an article of clothing comprising at least one light emitting diode (LED) being attached thereto, said LED being operable to direct light away from a wearer of the clothing.

20 The or each LED may be arranged to convey a message from a wearer of the article of clothing to third parties spaced from the wearer. To achieve this, the LEDs may be located in a configuration which forms letters and/or words. Alternatively or additionally, the LEDs may be configured into patterns and may be decorative.

25 Preferably, the or each LED is powered by a battery. Suitably, the battery is small such that it can be discreetly hidden within the clothing, for example a PP9 battery. Preferably, the LEDs may all be powered by one battery.

30 The or each LED may be arranged to be illuminated permanently such that the message is permanently visible. However, this may result in the battery power being exhausted relatively quickly. The or each LED may be under the control of a timer. The or each LED may be arranged to be illuminated intermittently. The or each

LED on the article of clothing may, in use, flash on and off at different frequencies and for different periods of time. The or each LED may be operable to be switched on or off under the control of the wearer of the article of clothing. The or each LED may be operable or programmable by the wearer in order that the wearer may choose or select a message to be displayed. The or each LED may be operable by a remote switch. For example, a cyclist may activate the LEDs by means of a remote switch attached, for example, to a brake lever as he slows down the speed of his bicycle. An electrical connection between the remote switch and the LEDs may be provided to facilitate activation of the LEDs.

10

The LED may have a hook and pile fastener attached thereto for attachment to the article of clothing. Also, the battery may be secured to the clothing by a hook and pile fastener.

15 According to a second aspect of the present invention there is provided a method of conveying a message or image from a first person to a second person, the method comprising the first person wearing an article of clothing to which a plurality of LEDs has been attached in a configuration to represent the message or image.

20 According to a third aspect of the present invention, a method of signalling the presence of a first person to a second person comprises the first person wearing an article of clothing to which at least one LED has been secured, the or each LED being illuminated to signal the presence of the first person to the second person.

25 All of the features described herein may be combined with any of the above aspects, in any combination.

For a better understanding of the invention, and to show how an embodiment of the same may be carried into effect, reference will now be made, by way of example, to  
30 the accompanying diagrammatic drawings, in which:-

Figure 1 is a schematic plan of an article of clothing with LEDs attached thereto; and Figure 2 is a close up view of the embodiment of Figure 1.

Referring to Figure 1, an article of clothing 2, for example a jumper, is shown with LEDs 8, being arranged into the word "SLOW" 4 and into a star motif 6.

Referring to Figure 2, the individual LEDs 8 are shown spaced to formed the letter "S". It should be appreciated that any arrangement of LEDs 8 may be applied to any article of clothing 2. Each LED 8 is attached to a battery or batteries 10 by a wire 14 (not all shown here for clarity). The battery 10, for example a PP9 battery, is concealed and fixed in position underneath a hook and pile fastener backed patch 12.

The battery is attached to a switch or timer 16 depending on the intended use of the garment. For example, it may be desirable to arrange the LEDs so that they are switched on permanently, for example, by setting the switch 16 into an "on" position. This might be the case where the configuration of LEDs is decorative such as the star motif 6. Alternatively, the user may wish to arrange the LEDs so that they flash on and off intermittently under the control of the timer 16. The timer will be pre-programmed so that the flashing occurs at different frequencies and for different periods of time.

If the wearer of the garment 2 is a cyclist, he can manually control when the "SLOW" message 4 is illuminated, for example when he slows down the speed of his bicycle, by operating a remote switch 16 attached to a brake lever (not shown). An electrical connection between the remote switch 16 and the LEDs 8 can be provided to facilitate the activation of the LEDs.

The wearer of the garment 2, may be able to select or choose the message to be displayed by the garment. The LEDs 8 may be fully programmable to aid this. The LEDs may be arranged such that the pattern or message appears to scroll across the clothing either vertically or horizontally by programming the LEDs to be lit for

predetermined periods of time. In such situations, the LEDs may be arranged to form a screen on the article of clothing. Accordingly, letters may be arranged to scroll across the screen. In addition, this could be switched off or made to flash.

- 5 The reader's attention is directed to all papers and documents which are filed concurrently with or previous to this specification in connection with this application and which are open to public inspection with this specification, and the contents of all such papers and documents are incorporated herein by reference.
- 10 All of the features disclosed in this specification (including any accompanying claims, abstract and drawings), and/or all of the steps of any method or process so disclosed, may be combined in any combination, except combinations where at least some of such features and/or steps are mutually exclusive.
- 15 Each feature disclosed in this specification (including any accompanying claims, abstract and drawings), may be replaced by alternative features serving the same, equivalent or similar purpose, unless expressly stated otherwise. Thus, unless expressly stated otherwise, each feature disclosed is one example only of a generic series of equivalent or similar features.
- 20 The invention is not restricted to the details of the foregoing embodiment(s). The invention extend to any novel one, or any novel combination, of the features disclosed in this specification (including any accompanying claims, abstract and drawings), or to any novel one, or any novel combination, of the steps of any method
- 25 or process so disclosed.

Claims

1. An article of clothing comprising at least one light emitting diode (LED) being attached thereto, said LED being operable to direct light away from a wearer of the clothing.  
5
2. An article of clothing as claimed in claim 1 in which the or each LED is arranged to convey a message from a wearer of the article of clothing to third parties spaced from the wearer.  
10
3. An article as claimed in claim 2 in which the LEDs are located in a configuration which forms letters and/or words.
4. An article as claimed in any preceding claim in which the LEDs are configured into patterns.  
15
5. An article as claimed in any preceding claim in which the or each LED is powered by a battery.
- 20 6. An article as claimed in claim 5 in which the battery is small such that it can be discretely hidden within the clothing.
7. An article as claimed in claim 5 or claim 6 in which the LEDs are all powered by one battery.  
25
8. An article as claimed in any preceding claim in which the or each LED is arranged to be illuminated permanently.
9. An article as claimed in any preceding claim in which the or each LED is under the control of a timer.  
30

10. An article as claimed in any preceding claim in which the or each LED is arranged to be illuminated intermittently.

11. An article as claimed in claim 10 in which the or each LED on the article of clothing, in use, flashes on and off at different frequencies and for different periods of time.

12. An article as claimed in any preceding claim in which the or each LED is operable to be switched on or off under the control of the wearer of the article of clothing.

13. An article as claimed in claim 12 in which the or each LED is operable by remote switch.

14. An article as claimed in any preceding claim in which the LED has a hook and pile fastener attached thereto for attachment to the article of clothing.

15. An article of clothing substantially as described herein with reference to, and as shown in any of the accompanying drawings.

16. A method of conveying a message or image from a first person to a second person, the method comprising a first person wearing an article of clothing to which a plurality of LEDs has been attached in a configuration to represent the message or image.

17. A method of conveying a message or image from a first person to a second person substantially as described herein with reference to, and as shown in any of the accompanying drawings.

18. A method of signalling the presence of a first person to a second person comprising the first person wearing an article of clothing to which at least one LED



has been secured, the or each LED being illuminated to signal the presence of the first person to the second person.

19. A method of signalling the presence of a first person to a second person  
5 substantially as described herein with reference to, and as shown in any of the accompanying drawings.



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Claims searched: 1-19

Examiner: Sarah Harrison  
Date of search: 29 June 2001

**Patents Act 1977**  
**Search Report under Section 17**

**Databases searched:**

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.S): A3V

Int Cl (Ed.7): A41D, G09F

Other: Online: EPODOC, WPI and JAPIO

**Documents considered to be relevant:**

Category	Identity of document and relevant passage	Relevant to claims
X	US 5680718 (First Choice Trading Ltd) see whole document	1-14 and 16-18
X	US 5113325 (Eisenbraun) see whole document	1-14 and 16-18
X	US 4882865 (Andeweg) see whole document	1-14 and 16-18
X	US 4709307 (McKnight Road Enterprises Inc) see whole document	1-14 and 16-18
X	US 4602191 (Davila) see whole document	1-14 and 16-18

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.